

DOCUMENT RESUME

ED 158 507

EC 111 908

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TITLE Malnutrition: The Wasting of Human Potential.
PUB DATE Jun 78
NOTE 12p.; Paper presented at the World Congress on Future Special Education (First, Stirling, Scotland, June 25 - July 1, 1978)

EDRS PRICE MF-\$0.83 HC-\$1.67 Plus Postage.
DESCRIPTORS Cognitive Development; Developing Nations; Environmental Influences; *Etiology; *Handicapped Children; *Nutrition; Research Reviews (Publications); *Special Health Problems

ABSTRACT

The paper discusses the prevalence of malnutrition in developing countries and the United States, particularly as it relates to debilitating physical and psychological disorders. Educational, social, and political factors which influence the cycle of malnutrition are described. Research on the relationship between malnutrition and intellectual development is reviewed. Special educators are urged to become more knowledgeable about the effects of malnutrition so that they may be better equipped to influence the development of enlightened food and nutrition policies.
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Malnutrition: The Wasting of Human Potential

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Abstract

Malnutrition causes one-half of all the children in the world to be at risk from debilitating physical and psychological disorders. In this article the prevalence of malnutrition is discussed in developing countries and in the United States. Educational, social, and political factors which influence the cycle of malnutrition are described. Research on the relationship between malnutrition and intellectual development is reviewed. Special educators are urged to become more knowledgeable about the effects of malnutrition so that they may be better equipped to influence the development of enlightened food and nutrition policies.

Malnutrition: The Wasting of Human Potential

More than half of all the children in the world are at risk from the effects of malnutrition (Read, 1976). Yet it is a rare special educator who takes political and/or social positions regarding this fact.

Malnutrition is defined as a state in which an individual lacks one or more nutrients to the extent that specific symptoms and conditions appear such as anemia, goiter, rickets, vitamin deficiencies, or retardation in physical development (Read, 1976). Severe malnutrition refers to two types of diseases resulting from prolonged protein and calorie insufficiency in early childhood. Marasmus results from severe restriction of food intake, particularly of calories and protein from birth, and is manifested in the wasting of tissues, and severe growth retardation. Kwashiorkor is the result of inadequate protein intake and occurs most often when a child changes from breast or bottle milk to foods high in starch, but low in protein. It produces extreme stunting of growth, water retention, skin sores, and discoloration of the hair to red or blond. Both diseases cause death if untreated (Manocha, 1972).

Periods of malnutrition leave permanent deficiencies in the physical and mental development of an individual which may not be corrected by an improved diet supplied at a later time. The consequences of malnutrition depend on the time in the life of the individual when nutritional deficits occur, as well as on the severity and duration of the deficit. Severe malnutrition in a pregnant

woman may affect the unborn child by reducing the nutrients available to it for normal cell growth. Severe malnutrition during the first six months of the infant's life further reduces the number of brain cells the baby will develop since by the end of the first year the brain has achieved 70 percent of its adult weight, and by the end of the second year, it has practically completed its growth (Read, 1969).

Winick & Rosso (1969) reported that a prenatally and post-natally deprived animal starts its life with as few as 40 percent of the normal number of brain cells. The brains of infants who died of marasmus in Chile were found by Dr. Winick to have only 40 percent of the expected number of cells when compared with the brains of infants who died from accidents.

In order to determine the effect of environment, as well as the effect of nutrition on intelligence, Dr. Fernando Monckeberg (1969) studied three groups of urban preschool children: a middle class, well-nourished group, an economically lower class group participating in a nutritional supplementation program, and an economically lower class group of malnourished children. Monckeberg found that the last group performed significantly less well on tests of intellectual ability, even though their environment was similar to that of the second group. The first two groups performed alike, in spite of the fact that their environments were quite different. In this study, poor nutrition appeared to be associated with poor test performance.

One of the most comprehensive studies regarding nutrition and environment is being conducted in rural Guatemala (Cravioto, DeLicardie

& Birch, 1973). Groups of infants who have been nutritionally supplemented, and those who have not received supplements are being studied throughout childhood. Frequent measures are taken on physical and intellectual growth characteristics. Socioeconomic variables, and interactions with family members are being recorded.

Birth weight has increased in those infants who ^{se mothers} have received food supplements. These children have also shown better growth development. There are significant differences in behavioral test scores between the supplemented and unsupplemented children. By the time they are three years old these improvements have been observed in motor and manipulative skills.

Undernutrition in the United States

A report from the Senate's Select Committee on Nutrition and Human Needs estimated that 75 to 85 percent of the approximately 150,000 mentally defective and retarded children born in the United States each year are born into poverty (Hunger's Lifelong Effects, 1974, p. 12).

In the United States, marasmas and kwashiorkor are rare, but chronic undernutrition and iron deficiency are common (Abraham, Lowenstein & Johnson, 1971). In a U.S. government sponsored survey, 20 percent of the children studied who were under six, consumed less than the recommended daily intake of calories. Children in low income families consumed less than 30 percent of the recommended intake. Children from some Southern States, and poor Black and Spanish-American children, were more likely to have inadequate calorie con-

sumption (Ten State Survey, 1968-1970).

Iron deficiency is widespread in the United States (Read, 1976). More than one-half of the children aged one to five years have inadequate iron levels. This deficiency is not limited to the lower socioeconomic classes. Children suffering from chronic undernutrition are delayed in behavioral development. The deficits appear to involve motor-integrative performance, reading ability, concentration, and motivation (Read, 1976).

Solutions

Education

Lack of education is a major part of the nutrition problem. In developing countries it is often difficult to reach the people who are most in need of education regarding nutrition because of primitive communication systems. There are food subsidy programs which direct their efforts toward the malnourished. These programs are run by the governments of some developing countries, but they usually cooperate with other food donors such as private voluntary organizations, and the World Food Program of the United Nations. These programs should be taken advantage of in order that malnourished peoples be reached (Martin, 1974, p. 4).

Manocha (1972) stressed the need for education which teaches that children and pregnant or lactating mothers need more nutritious foods, particularly proteins, than other adults. This awareness would modify the distribution of food in a family, and would alleviate the less chronic forms of malnutrition. For example, adults would give their

children a fair share of meat, fish, or beans, rather than feeding them primarily foods such as yams or plantains.

Manocha emphasized that a country must be convinced about the need for population control. The problems of malnutrition can be solved through an integrated program of nutritional knowledge, medical care, and family planning.

Agriculture, the Economy and Politics

The United States is the world's only agricultural superpower (Morgan, 1976, p. 8). It produces half of all the world's corn. This food power gives the United States the power to affect nutrition and economies to an unprecedented degree. Policy makers and other citizens of the United States are often unaware of the ramifications of the power we hold in being a food superpower. There needs to be a broad American food policy that would balance the interests of farmers, consumers, cash-paying customers abroad, and the malnourished in poor countries.

The responsibility for shaping just international food policies must be shared by all developed countries in the world. Mackie (1975) wrote:

Reserve stocks of grain are important and necessary, but stocks alone are not sufficient to assure world food security. International cooperation is an essential ingredient in safeguarding world food security by sharing the burden of stockholding and making reserves available to countries which need supplies during temporary shortages. International cooperation

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should also take the form of exchanging relevant information on national stock levels, current crop conditions and forecasts, and current and prospective exports and imports (p. 12).

Population Control

James W. Howe and John W. Sewell (1975, p. 4) wrote that the world population is growing at nearly two percent annually. This rate of growth brings a doubling of the population every 35 years. What are those factors which influence the desire for large families in developing countries? The first is a value system in which an individual's worth is measured by the number of children he produces. Secondly, children in developing countries are economically useful to their parents. The children can work on their parents' farms and can take care of their parents when they reach old age. A third factor affecting family size is the desire of individuals to have a source of joy within their lives. Having children may offer one of the few fulfilling events in lives fraught by dreary toil and hand-to-mouth existence.

A carefully designed policy of rural development, if successful in raising health and education standards, employment, production, and incomes, could help to solve both of the world's most urgent problems: hunger and high birth rates. According to Howe and Sewell birth rates do not decline until basic social needs have been satisfied, including an assured food supply, reduced infant mortality rates, literacy, and at least rudimentary health services. Nevertheless, governments must examine the question of uncontrolled human

fertility and the threat this problem poses. Current worldwide expenditures on family planning must be reassessed in light of the small percentage of national budgets it has received.

The "Lifeboat Ethic"

The analogy of the "lifeboat" ethic has been used to discourage our assistance to the neediest. Critics claim that the rich countries are surrounded by a sea of clamorous millions, hungry to get aboard the ship shared by the affluent. The wealthy must remove the hands of the poor from the lifeboat so that the wealthy are not dragged into the sea of hunger (Howe & Sewell, 1975, p. 1).

Ordinarily the world does produce enough food to keep ahead of population growth, but startling disparities exist in the distribution of that food. The United Nations estimated in 1970 that providing the millions suffering from malnutrition with an additional 250 calories per day would call for about 12 million additional tons of cereals. This is only about one percent of the world consumption (Howe & Sewell, 1975, p. 2).

In developing countries fathers or breadwinners get the most food. Many mothers must decide who will eat and who will not. Today billions are spent in the world devising and refining weapons of war. Waste and abundance exist side by side in affluent homes. Considering these factors, it is not for the affluent to suggest that the peoples of certain nations should be allowed to die from hunger and disease.

Conclusion

Special educators must be aware of the devastating nature of malnutrition. Our political leaders must become knowledgeable of the situation and demonstrate persistence and strength in the search for enlightened food and nutrition policies.

Special educators are entrusted with the education of children whose needs widely differ, but who have been unable to profit from traditional educational programming. It is imperative that we understand the negative effects that inadequate nutrition has upon the minds and bodies of children. Our interest in the well-being of children should extend not only to those children who live within our respective national boundaries, but to every child regardless of his nationality. Increased knowledge and understanding will enable special educators to be instrumental in the development of educational, social, and political reforms which are necessary for the eventual eradication of malnutrition. As special educators we share the value of wanting each child to enter his life, and live his life, with every physical and psychological advantage that adequate nutrition affords.

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